Forensic Science International: Mind and Law 1 (2020) 100031

Contents lists available at ScienceDirect

Forensic Science International: Mind and Law

journal homepage: www.journals.elsevier.com/forensic-science-international-mind-and-law

Prisons and Probation

Substance misuse and community supervision: A systematic review of the literature

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ARTICLE INFO

Keywords:
Probation
Substance misuse
Substance abuse
Addiction
Systematic review
Criminal justice system

ABSTRACT

A narrative systematic review was undertaken of the literature concerning the health of people on probation or parole (community supervision). In this paper, we provide an up-to-date summary of what is known about substance misuse in this context. This includes estimates of the prevalence and complexity of substance misuse in those under community supervision, and studies of the effectiveness of approaches to treating substance misuse and engaging and retaining this population in treatment. A total of 5125 papers were identified in the initial electronic searches, and after careful double-blind review only 31 papers related to this topic met our criteria. In addition, a further 15 background papers were identified which are reported. We conclude that internationally there is a high prevalence and complexity of substance misuse amongst people under community supervision. Despite clear benefits to individuals and the wider society through improved health, and reduced re-offending; it is still difficult to identify the most effective ways of improving health outcomes for this group in relation to substance misuse from the research literature. Further research and investment is needed to support evidence-based commissioning by providing a detailed and up-to-date profile of needs and the most effective ways of addressing them, and sufficient funds to ensure that appropriate treatment is available and its impact can be continually measured. Without this, it will be impossible to truly establish effective referral and treatment pathways providing continuity of care for individuals as they progress through, and exit, the criminal justice pathway.

1. Background

'Substance misuse' includes improper use of alcohol and/or legal or illegal drugs, and addiction, as opposed to drinking in moderation, or using medication as prescribed. Thus it includes but is not restricted to, diagnosable substance use disorders. Exactly which types of substance use are considered to be illegal, and the consequences of this, has varied over time, and also varies by location (Loue, 2003). Often substance misuse is comorbid with other health issues such as mental illness, and may also be combined with experiencing negative social determinants of health such as unemployment and homelessness. Such complexity of need can form a barrier to healthcare access, with, for example, mental health services being unwilling to accept people with ongoing substance misuse problems. Substance misuse can also be a driver of offending behaviour, and consequently, is something that criminal justice as well as health services have a role in monitoring and addressing. For people under community supervision, it is important that effective provision is in place to support those with substance misuse needs, both to improve their health, and to reduce associated offending behaviour.

The majority of healthcare for people on probation in England should be commissioned by Clinical Commissioning Groups (CCGs) (NHS Commissioning Board, 2012, 2013), with commissioning decisions being informed by Joint Strategic Needs Assessments prepared through Health and Wellbeing Boards (Department of Health, 2013). In addition, Local Authorities have a non-mandated function as a condition of the public health grant for commissioning substance misuse services. However, many CCGs appear to be unaware of this responsibility, and people in the criminal justice system are often not visible in these assessments (Brooker & Ramsbotham, 2014; Brooker, Sirdifield, Ramsbotham, & Denney, 2017; Revolving Doors Agency, 2017). The profile of the health needs of people under probation supervision differs from that of the general population, with much research demonstrating a higher prevalence of

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https://doi.org/10.1016/j.fsiml.2020.100031
Received 14 May 2020; Received in revised form 8 September 2020; Accepted 10 September 2020

substance misuse in those under probation supervision than in the general population (Sirdifield et al., 2019). This needs to be taken into account by commissioners in order to ensure that the needs of this group are met.

The study reported here was one part of a larger study aiming to investigate the range and quality of healthcare for people on probation (individuals on community sentences and post-release licences) in England, and to produce a commissioning toolkit (available at probhct.blogs.lincoln.ac.uk). The study included a systematic review of international research on the most effective ways of providing healthcare for adults on probation to achieve good health outcomes. Findings in relation to substance misuse are reported here.

2. Methods

2.1. Search strategy

We searched MEDLINE, PsycINFO, IBSS, CINAHL, The Cochrane Library, EMBASE, AMED, ASSIA, and HMIC for papers published between January 2000 and May 2017; and hand-searched the British Journal of Criminology, the Probation Journal, the Irish Probation Journal, and Health and Social Care in the Community from 2000 to September 2017. We also hand-searched the reference lists of included papers, and the grey literature. Further details of this and the MEDLINE search strategy have been reported previously (Brooker, Sirdifield, & Marples, 2020; Sirdifield, Brooker, & Marples, 2020).

2.2. Inclusion and exclusion criteria

This paper reports findings in relation to substance misuse that are drawn from a wider review. This review had two goals. The first was to identify what the literature tells us about the most effective approaches to improving health outcomes for adults on probation. Our second goal was to identify what the literature tells us about the health needs of adults on probation, their patterns of service access, and any potential approaches to improving health outcomes that are *described* in the literature, but have not yet been subject to research or evaluation.

Consequently, two types of paper were included in the review. Firstly studies that *researched the effectiveness of an approach* to improving health outcomes for adults on probation. Papers that included people on parole were also included, so henceforth we refer to people under community supervision where appropriate. There were no restrictions for language or study design.

Secondly, we included papers that met the above criteria but purely *described* an approach to providing healthcare to the target population or were illustrative of their health need as 'background' papers.

2.3. Assessment of relevance for inclusion in the review

Two members of the research team independently assessed titles and abstracts and full papers where relevance was unclear. Disagreements were resolved through discussion with a third reviewer.

As reported previously (Sirdifield, Brooker, & Marples, 2020), papers were quality assessed using tools appropriate for the methodology used in each study, but this assessment was not used to exclude papers from the review.

3. Results

After duplicates were removed, 3316 papers were identified from the database searches, of which 51 were identified as appropriate for full-text review. An additional four papers were acquired for inclusion following the hand-searching, bringing the total to 55.

After reading these papers in full, 25 were included in the review and 20 further papers were identified and included from their reference lists. Thus, the total number of includes was 45, of which 31 related to substance misuse. An additional 85 papers were classified as 'background', of which 15 related to substance misuse (Fig. 1).

4. Description of studies

4.1. Background papers

Four background papers provided *overviews* of substance misuse services – including a Rapid Assessment and Treatment Service for Drug and Alcohol Misusers (Murphy & Sweet, 2004), random assignment to either a therapeutic community, a recovery home, or a usual care setting (Jason, Olson, Harvey, 2015), a web-based intervention to increase motivation to enter substance misuse treatment called MAPIT (Walters et al., 2014), and a prospective model of the economic costs and benefits of introducing Alcohol Treatment Requirements in Stockport, UK (Fox, Albertson, Williams, Ellison, 2011).

Additionally, the background papers offered some insight into the prevalence of substance misuse amongst those under community supervision, factors that increase the likelihood of substance misuse, the benefits of treatment and advice, predictors of treatment retention, and commentary on policy decisions around the provision of substance misuse services.

In relation to prevalence, Murphy and Sweet (2004) and Martyn (2012) reported the high levels of drug and alcohol misuse amongst people on probation when compared to the general population, with many people misusing both drugs and alcohol, and poly drug abuse appearing to be the norm. In the latter study, staff linked drug misuse to a current offence for 74% of those misusing drugs, and 71.3% of those misusing alcohol.

Factors that increase the likelihood that someone will misuse drugs and/or alcohol, or resume substance misuse after achieving abstinence were investigated in two studies. Firstly in terms of the relationship between non-medical prescription opioid use, and victimisation, psychological distress and health status in 406 women on probation and parole (Hall, Golder, Higgins, & Logan, 2016). Here those using non-medical prescription opioids were "more likely to be White, have poorer general health, and more severe psychological distress" (Hall et al., 2016, p. 113). Secondly, in relation to the rate of resumption of substance use following release from prison, and risk factors for relapse amongst 533 adults with a history of injecting drug use in Queensland, Australia (Winter et al., 2016). Here, the rate of resumption of use was highest in the first month following release and was significantly associated with being unemployed at previous interview, shorter incarceration, and use during the index incarceration; whilst parole was a protective factor (Winter et al., 2016, p. 104).

Predictors of treatment retention were investigated by Kelly et al. (2011) in relation to the predictors of methadone treatment retention for 351 opioid-dependent people on programmes in Baltimore. Amongst other factors, this study pointed to the importance of early satisfaction with treatment as a predictor of longer-term treatment retention, and the potential benefit of providing services to address service users' legal problems to avoid these impacting negatively on treatment retention.

Several papers demonstrated that providing effective treatment and/or advice about substance misuse may play a role in preventing deaths and in reducing harm from activities such as syringe sharing (Carter, Ryan, & Scott, 2000; Nicosia, Kilmer, & Heaton, 2016; Small, 2007).

Finally, several papers provided commentary on policy decisions related to the provision of substance misuse services, including the politics of addiction in Canada in relation to Vancouver's Supported Injection Facility (Small, 2007); intended and unintended consequences of drug treatment policy (the 'war on drugs') in the UK (Gyngell, 2011); an overview of the literature around methadone maintenance treatment (Joseph, Stancliff, & Langrod, 2000); and the cost-effectiveness of the Drug Interventions Programme (DIP) in the UK (Collins, Cuddy, & Martin, 2016; Osborne, 2013). This was a Home Office initiative introduced in England in 2003 to connect the criminal justice system and Drug

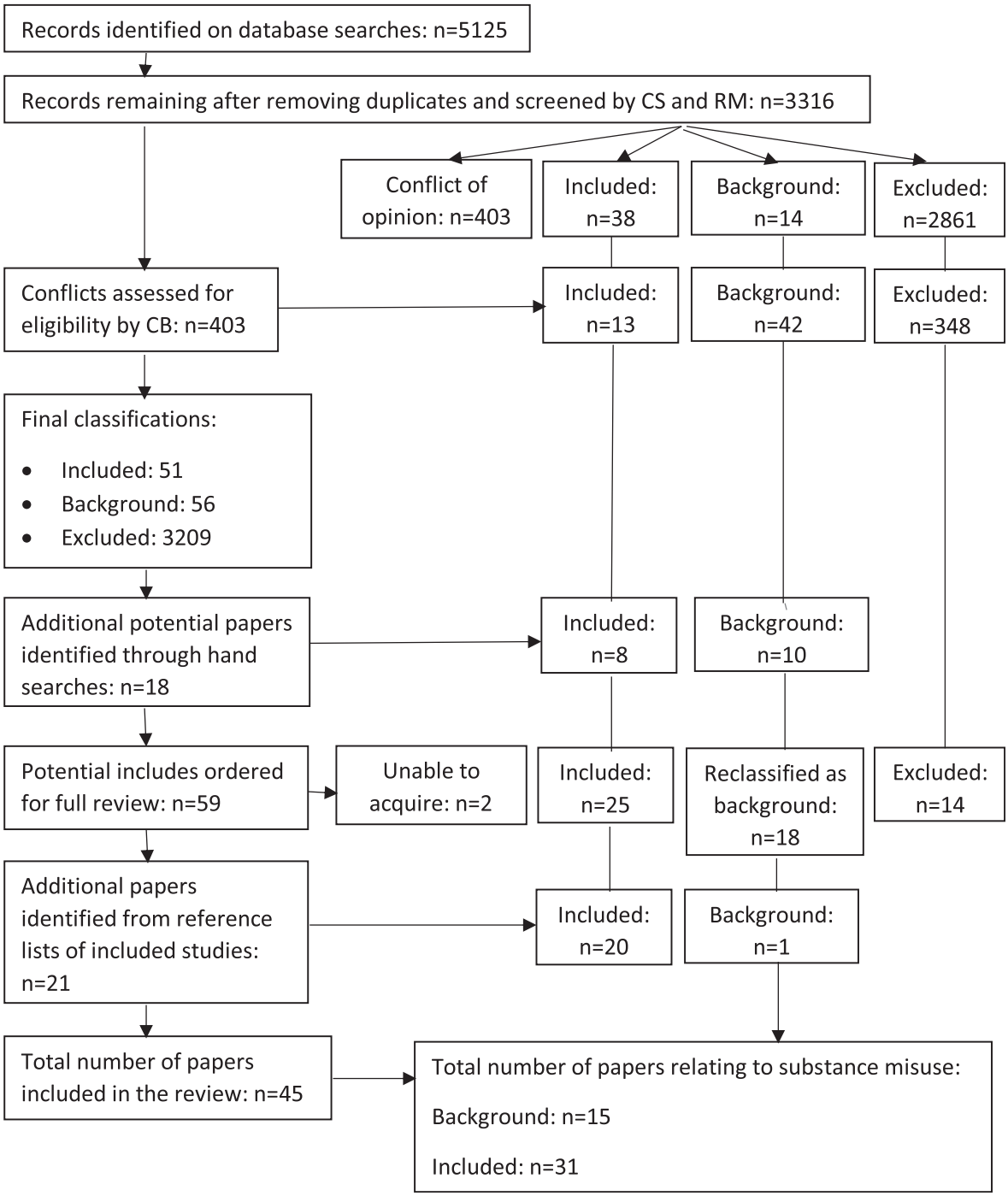

Fig. 1. PRISMA diagram

Action Teams (DATs).

4.2. Included studies

Overall, 31 studies on substance misuse met the criteria for inclusion in the review. These studies were published between 2000 and 2014 in the USA (Alemi et al., 2006; Anglin, Nosyk, Jaffe, Urada, & Evans, 2013; Brewster, 2001; Brown, Gassman, Hetzel, & Berger, 2013; Chun et al., 2007; Claus & Kindleberger, 2002; Cropsey et al., 2011; Evans, Li, Urada, & Anglin, 2014; Gottfredson & Exum, 2002; Gray, 2002; Gregoire & Burke, 2004; Gryczynski et al., 2012; Harrell, Cavanagh, & Roman, 2000; J. F. Kelly, Finney, & Moos, 2005; S. M. Kelly, O'Grady, Jaffe, Gandhi, & Schwartz, 2013; Kleinpeter, Deschenes, Blanks, Lepage, & Knox, 2006; Longshore et al., 2005; Mackin et al., 2008; Marchand, Waller, & Carey, 2006; Martin, Clapp, Alfers, & Beresford, 2004; Martin et al., 2003; Sia, Dansereau, & Czuchry, 2000; Stageberg, Wilson, & Moore, 2001), the UK (Ashby, Horrocks, & Kelly, 2010; Eley, Gallop, McIvor, Morgan, & Yates, 2002; Hearnden, 2000; McSweeney, Stevens, Hunt, & Turnbull, 2007; Powell, Bankart, Christie, Bamber, & Arrindell, 2009; Turnbull & Webster, 2007), Ireland (Hollway, Mawhinney, & Sheehy, 2007) and Mexico (Brodie et al., 2009). Due to the heterogeneous nature of the papers, we have organised them into subsections below.

4.2.1. Pharmacological treatments

Three studies examined outcomes of pharmacological treatments for substance misuse, namely vigabatrin use for parolees with cocaine

dependence (Brodie et al., 2009), methadone or levo-alpha-acetylemethadol for heroin-dependent people on probation (Gryczynski et al., 2012), and buprenorphine for opioid-dependent women on probation or parole (Cropsey et al., 2011). These studies illustrate the difficulties involved in trying to investigate and draw firm conclusions about pharmacological treatments specifically in relation to those under community supervision. There is variation across these studies in the drugs tested, the sampling approaches used, and how outcomes were measured. Whilst all three studies draw some cautiously optimistic conclusions, they also demonstrate the uncertainty around this. For example, Brodie et al. report that abstinence rates did not differ over the whole treatment period that they studied. Rather, differences in favour of vigabatrin were recorded in weeks 7 ($p \leq 0.02$) and 9 ($p \leq 0.02$) (Brodie et al., 2009, p. 1273). All three studies show how outcomes may also vary by personal characteristics and variables such as poly drug use, or members of a placebo group having unauthorised access to the drug being tested. Outcomes can also be influenced by whether or not participants are aware of whether they are receiving a drug or a placebo (Cropsey et al., 2011).

Overall, the lack of studies in this area, and the variation between those that were identified means that it is impossible to draw firm conclusions about the most effective pharmacological treatments for use with people under community supervision.

4.2.2. Non-pharmacological support

Two studies reported on non-pharmacological support for substance misuse problems (Table 3).

Gray. (2002) described early outcomes from the Brooklyn Program. Overall, 80% of those enrolled completed the treatment, and 55% of graduates remained drug-free after completion, compared to 16% of non-graduates.

Hollway et al. (2007) examined the impact of a residential addiction treatment programme provided at Harristown House in Ireland on substance abuse and on participants' attitudes towards the criminal justice system. The health-related findings suggested that the programme had a mixed impact on substance misuse, with 36% ($n = 5$) of cases maintaining abstinence between completing the treatment and the end of the data collection period, whilst 64% ($n = 9$) relapsed after completing the treatment and 22% ($n = 2$) reported drinking regularly (Hollway et al., 2007, pp. 116–117). Nearly two thirds of clients reported relapsing at least once after completing the residential part of the treatment. At the end of the data collection period, data were available for 12 participants, 11 of which reported that they were now abstinent.

4.2.3. The impact of treatment readiness and of coerced or mandatory treatment

Numerous forms of coerced or mandatory treatment have been introduced around the world that attempt to improve access to care for people under community supervision, and to potentially produce cost-savings through early intervention leading to improved health, reductions in unnecessary use of crisis care, and reduced criminal justice costs due to reductions in re-offending and improved compliance with probation. We identified several studies relating to the impact of coercive versus voluntary treatment on outcomes.

One could assume that those mandated to treatment would be less ready to change and/or have worse outcomes than those attending treatment voluntarily as the primary motivation to attend treatment may be the avoidance of criminal charges rather than a desire to change. However, findings from the research in this area are mixed. In a study comparing voluntary and coerced attendance at outpatient treatment for substance misuse in Ohio, USA, Gregoire and Burke (2004) reported that individuals that were legally coerced to attend treatment (79% of whom were on probation or parole) were more likely to be in the 'action' stage of change than voluntary attenders, even after controlling for the severity of current and lifetime substance abuse. Women were also more likely than men to be in the action stage, regardless of substance abuse severity, or legal coercion. However, the researchers note that the study may be subject to selection bias, as those less motivated to change may have chosen another legal sanction such as imprisonment, rather than attending legally coerced treatment.

Kelly et al. (2005) compared outcomes for veterans mandated to substance use disorder treatment following criminal justice involvement, to those for individuals with criminal justice involvement that were accessing treatment voluntarily, and voluntary patients with no criminal justice involvement. Some differences were reported in the characteristics of the groups being compared. Findings showed that there were no statistically significant differences between groups in satisfaction with treatment or perceptions of the treatment environment. The mandated group showed less of a decrease in symptoms between intake and discharge than the other groups, but were more likely to be abstinent, in remission, and to have encountered substance-related consequences than the other groups at one-year follow-up (J. F. Kelly et al., 2005, p. 218). These differences in treatment outcomes could not be explained by the initial differences between groups. Thus, despite having less motivation to change at intake, the mandated participants had similar perceptions of their treatment to the other groups and "improved as much, if not more than, other patients in their substance use outcomes" (J. F. Kelly et al., 2005, p. 221).

Sia et al. (2000) evaluated whether attending treatment readiness training would improve satisfaction and progress with substance misuse treatment amongst 500 people on probation with non-violent drug-related offenses. Those with high readiness for treatment scores rated their counsellors and sessions more highly than those with lower readiness levels. Those with high readiness scores, and those receiving readiness training, rated themselves as engaging with the programme more positively than others. Although not directly related to health benefits, these positive ratings of staff, content and engagement with the programme are all likely to have a positive impact on treatment engagement and completion, but more research is needed to determine whether or not readiness training is having the desired effect. A web-based Motivational Assessment Program to Initiate Treatment is also being developed and tested in a randomised controlled trial (see Walters et al., 2014 above).

In addition to the above, studies, we also identified literature on Drug Treatment and Testing Orders and Alcohol Treatment Requirements in the UK, specialist courts in the USA, and the introduction of Proposition 36 in the California Substance Abuse and Crime Prevention Act (SACPA) as described below.

4.2.3.1. Drug treatment and Testing Orders (DTTOs). DTTOs were introduced into England and Wales via the Crime and Disorder Act 1998, and later introduced into Scotland. They could be added to an existing community order, or stand alone, and aimed to support those whose offending is driven by drug misuse, to reduce their drug misuse and any associated offending behaviour. They involved partnership working between courts, probation and treatment services, including regular drugs testing as a condition of a probation order. They have since been replaced by Drug Rehabilitation Requirements (DRRs). We identified several papers on this topic in our review, whose aims and methods are summarised in Table 1.

These studies provide valuable learning in terms of the complexity of measuring the outcomes of these orders. For example, Powell et al. (2009) demonstrated that where sentencing occurred and where an order commenced, impacted on the percentage of negative drug tests recorded amongst those on a DTTO. Those sentenced in a magistrate's court and starting their order in the community (as opposed to in custody) showed the most improvement; whilst those showing the least improvement were those sentenced at crown court and starting their order in the community. Those starting their order in the community were likely to have higher starting levels of drug use, whilst those being sentenced at crown court were likely to be the most chaotic drug users.

Research in this area identified some of the difficulties encountered

Table 1
DTTO studies.

Reference	Aim, Country and Setting	Methods
Powell et al. (2009)	**Aim(s):** To examine changes in individuals' drug use whilst on a probation based drug treatment programme, and to explore the experiences of the staff administering drug tests **Country:** UK **Setting:** One probation area	**Sample:** n = 331 (422 Drug testing and treatment orders – some were concurrent) Mean age 26.5 years 85% male, 15% female 93% white, 6% other Analysed urinalysis or saliva swab drug test results for 317 people on a DTTO to compare negative drug test results per individual between the first and final month of their order; and conducted 17 semi-structured interviews with DTTO staff over a 3-year period. Here contemporaneous notes were made at the time and data were coded and analysed using a template style
Turnbull and Webster (2007)	**Aim(s):** To identify the best practice in engaging and retaining crack users on DTTOs **Country:** UK **Setting:** 3 services for crack-using offenders in London, West Midlands and Yorkshire	**Sample:** Case files for 70 crack users: 93% male 7% female Mean age: 31 years 2 in 5 were non-white Interviews with key stakeholders (n = 38) including 18 DTTO team members and 11 drug treatment agency staff Interviews with crack users (n = 28) 25 male, 3 female Mean age: 32 years 20 White British, 8 other ethnic groups
McSweeney et al. (2007)	**Aim(s):** To This present "the main findings of an evaluation of quasi-compulsory drug treatment (QCT) options for drug-dependent offenders in England. We define QCT as drug treatment that is motivated, ordered or supervised by the criminal justice system but which takes place outside prisons" (p471). The focus here is on Drug Treatment and Testing Orders (DTTOs) **Country:** UK **Setting:** 10 Community based drug treatment sites in London and Kent	**Sample:** A random sample of 157 "people who entered community-based drug treatment at one of ten research sites across London and Kent between June 2003 and January 2004" (p473). 89 were on a DTTO, and 68 were voluntary clients at the same treatment site 120 male, 37 female Average age: 31 years 125 White The voluntary group were more likely to report "having been prescribed medication for psychological or emotional problems (n = 39; 57 per cent) than the DTTO group (n = 28; 32 per cent) ($c2 = 10.56$, d.f. = 1, $p < 0.01$). They were also more likely to have experienced serious thoughts of suicide ($c2 = 7.89$, d.f. = 1, $p < 0.05$); to have actually attempted suicide ($c2 = 5.14$, d.f. = 1, $p < 0.05$); and have more lifetime suicide attempts than the QCT group ($t = -2.20$, d.f. = 155, $p < 0.05$)" (p474). No differences between groups in terms of previous exposure to treatment Participants were asked a set of questions that included adapted versions of the European Addiction Severity Index, questions around perception of pressure, the Readiness to Change Questionnaire "At intake (t1), questions about recent behaviour and circumstances referred to the thirty days prior to arrest for those in QCT and the thirty days prior to treatment admission for the 'volunteers'. These questions were administered again at six (t2), twelve (t3) and 18-month (t4) follow-up intervals" (p473) In-depth interviews with a purposive sample of health and criminal justice professionals (n = 38)
Eley et al. (2002)	**Aim(s):** "to evaluate the effectiveness of the pilot DTTOs in reducing drug misuse and associated offending and to assess the costs of DTTOs and alternative disposals" (pi) **Country:** UK **Setting:** Schemes in Glasgow and Fife	**Sample:** Data were collected from numerous sources including: social enquiry reports and DTTO assessments (n = 59), questionnaires completed by DTTO staff (n = 47 at baseline and n = 33 at six month follow up) and treatment providers (n = 45 from baseline and n = 18 from six month follow up), interviews with key stakeholders including people on DTTOs (n = 30 staff, and 38 offenders), and observation of court reviews

with delivery of DTTOs, which may be applicable to other forms of court-ordered treatment, particularly in terms of challenges around inter-agency working, and availability of treatment (Eley et al., 2002; McSweeney et al., 2007; Turnbull & Webster, 2007). It is apparent from this research that several things are needed for these orders to be delivered successfully (McSweeney et al., 2007; Turnbull & Webster, 2007). Firstly, clear communication and agreement about who is suitable for an order and whether or not they have attended a treatment service. Secondly, clarity in probation National Standards about what a realistic and acceptable level of drug use whilst on a DTTO is, how quickly participants can become drug-free, the likelihood of relapse, and how the results of drug screenings (positive or negative) should be used. Thirdly, ways of reducing delays in a) court reports showing individuals' suitability for a DTTO and b) processing breach proceedings. These are all points to consider in implementing DRRs or other similar interventions.

Positive findings were reported in terms of the impact of these orders on reducing drug use and offending behaviour and improving health (Eley et al., 2002; McSweeney et al., 2007). It is noteworthy that McSweeney et al. (2007) investigated whether after statistically controlling for other factors, people receiving treatment via a DTTO would have better retention in treatment than those attending voluntarily. This hypothesis was not supported.

4.2.3.2. Alcohol Treatment Requirements (ATRs). Alcohol Treatment Requirements were introduced in the UK under the Criminal Justice Act 2003 and are usually targeted at dependent drinkers, but in some areas, have also been offered to those with 'hazardous' and 'harmful' patterns of drinking (Ashby et al., 2010). In Ashby et al.'s study, data from the probation Offender Assessment System and Case Recording Management System, and treatment agency assessment data were examined for 81 individuals that had completed or were close to completing an ATR. Findings showed that 70% of the sample completed the ATR within the study period, and just 15% failed to complete it. Alcohol treatment workers' assessments suggested that 54% had made positive changes to their drinking behaviour and level of drinking, 11% had achieved

'controlled alcohol consumption', and 32% were abstinent. An additional 11% had reduced their alcohol consumption. However, 16% had continued to drink and were not engaging in treatment, 14% had deteriorated or relapsed whilst in treatment, and 15% of cases were described as too complicated to classify in this manner – sometimes due to other co-occurring conditions. For some, ATRs may provide a gateway to accessing other services – in this study, 7% of completers were referred for mental health treatment. However, it should be noted that engaging in treatment does not always result in behaviour change.

4.2.3.3. Specialised courts. Specialised courts with a focus on substance misuse exist in many settings internationally. We identified several papers relating to *drug* courts in our review. Reaching firm conclusions about the effectiveness of these courts is problematic because they vary in terms of who is eligible to participate, who can make referrals, and the duration and content of the programmes that they offer (see Table 2). Generally, participation is offered as an alternative to incarceration and involves regular attendance at both court and with treatment providers and probation, undergoing regular drug or alcohol tests, and a system of sanctions for non-compliance or positive tests, and rewards for progress and compliance.

Findings from these studies showed huge variation in graduation rates across the programmes, ranging from 11.4% (Brewster, 2001) to 72% (Mackin et al., 2008). Predictors of graduation varied across studies and included being white, having graduated high school, intravenous drug use, not having been incarcerated in the past, having fewer positive drug tests whilst on the programme, remaining in a programme for longer and having fewer prior arrests.

Numerous positive outcomes from attending drug courts were reported. These included being less likely to be rearrested than comparison groups (Brewster, 2001; Gottfredson & Exum, 2002; Mackin et al., 2008; Marchand et al., 2006); having fewer jail days (Brewster, 2001; Gottfredson & Exum, 2002); fewer, or a lower rate of positive drug tests (Brewster, 2001; Mackin et al., 2008; Marchand et al., 2006), which one study suggested could be further enhanced by the use of treatment and sanctions as part of the programme rather than simply drug testing and judicial monitoring (Harrell et al., 2000); and cost savings for the criminal justice system (Mackin et al., 2008; Marchand et al., 2006). It should be noted however, that some studies had the possibility of selection bias, there were mixed findings regarding costs (see for example Stageberg et al., 2001), and how outcomes were measured varied across the studies.

There are also specialised courts to support those misusing alcohol. Martin et al. (2003) conducted a small-scale study comparing data from a group ($n = 19$) of court ordered patients with a group of voluntary patients ($n = 22$), both of which were recruited from the outpatient disulfiram clinic at the Department of Veterans Affairs Medical Centre in Denver, USA (Martin et al., 2003). This study suggested that court mandate may actually improve compliance with this type of treatment for alcohol abuse or dependence, and may improve treatment retention at 12 weeks, which may in turn lead to positive treatment outcomes further down the line.

In a second study, Martin et al. (2004) examined treatment adherence amongst 19 voluntary and 17 court-mandated patients from the original groups in the above study at 15 months. Adherence to treatment was measured as the percentage of prescribed visits that were attended during the twelve months following the initial three-month observation period used in the previous study. As well as considering the same potential influencing factors as in the previous study, the researchers also assessed resource use by counting the number of emergency visits and hospitalisations experienced over the 12 months. There was a statistically significant difference between groups in terms of the proportion of scheduled visits attended ($p < 0.01$), with those court-mandated attending an average of 31.6% of appointments and voluntary patients attending an average of 27.6%. A statistically significant difference remained when the analysis was run on only those with alcohol dependence (rather than abuse) diagnoses. Adherence at three months was associated with adherence during the following twelve months. Furthermore, greater adherence at fifteen months was significantly associated with the number of lifetime drunk driving arrests ($r = 0.36$, $p < 0.05$) and a diagnosis of alcohol abuse rather than dependence ($r = 0.34$, $p < 0.05$) (Martin et al., 2004, p. 234). The remaining factors studied did not influence adherence. There was also a non-significant trend in the number of emergency visits, with those in the voluntary group averaging more visits. Thus the researchers conclude that "over a period of 15 months, court-ordered treatment may be more useful in achieving and maintaining adherence than voluntary treatment for patients receiving supervised disulfiram" (Martin et al., 2004, p. 235).

Finally, Kleinpeter et al. (2006) described findings from a process evaluation of a specialty court for people with both a serious mental illness and a substance misuse problem (i.e. people with a dual diagnosis) in Southern California. To graduate from the court "participants must be drug- and alcohol-free for a minimum of nine months. They must be compliant with all the conditions of probation and have completed the treatment as directed" (Kleinpeter et al., 2006, p. 67). The concluded that on average, specialty court participants made significant improvements during the first six months in terms of their level of functioning and quality of life. Most participants had been stabilised on medication. The service was seen as successfully filling a gap for treatment and continuity of care for those in the criminal justice system with a dual diagnosis. The researchers recommend that future services of this nature should be staffed by people experienced in working with individuals with mental illness, or else specialist training should be provided. They also recommend the use of individual treatment plans combining treatment for substance misuse and mental illness, and stress the importance of establishing partnerships with local treatment agencies to meet clients' needs.

4.2.3.4. Proposition 36, California Substance Abuse and Crime Prevention Act (SACPA). We identified four studies of the California Substance

Table 2
Non-pharmacological support.

Study	Summary of Support	Research Methods
Gray., (2002)	A strengths-based program for substance abusers supervised by the federal criminal justice system in the Eastern district of New York Consists of 2-h group meetings in a classroom for sixteen weeks, and at least two one to one sessions Learning includes developing skills around recalling and achieving positive emotional states, and designing and imagining possible futures - enabling clients to self-identify goals and directions for change	Data were collected on 127 cases during one treatment year, and analysis was conducted on 99 of these records, with others being removed due to missing or ambiguous data
Hollway et al. (2007)	The treatment provided is underpinned by the Minnesota Model 12-step philosophy and combines motivational interviewing, cognitive behavioural therapy, and brief solution focused theory over a period of six weeks of residential treatment and two years of community-based aftercare Treatment is accessed via referrals from the criminal justice system and targets those that have come into contact with the criminal justice system due to drug or alcohol misuse	The researchers collected data on 14 participants at three time points: pre-treatment, at the end of the residential treatment phase, and at 3–9 months post-admission using the Michigan Alcohol Screening Test (MAST), semi-structured interviews, and the modified version of the Criminal Sentiments Scale (CSS-M)

Table 3
Specialist court characteristics.

Study and Setting	Eligibility	Who Can Refer?	Summary of Programme Content	Overall Graduation Rate and Predictors of Success
Brewster., (2001) The Chester County Drug Court program in Pennsylvania, USA	Participants must be charged with a non-mandatory drug offence and should not a) be under probation or parole supervision when charged with this offence or b) have a prior record for a violent offence	Potential participants are identified by the Chester County Bail agency and immediately referred to a treatment provider for assessment and treatment (Brewster, 2001, p. 179) whilst the District Attorney's Office checks that they are eligible for the programme	Participants attend the court within a week of referral and attend drug testing supervised by probation There are three stages in the programme, each of which lasts for a minimum of 90 days Phase One: "at least two probation officer (PO) contacts per week, two drug tests per week, and Drug Court appearance every one to three weeks" (Brewster, 2001, p. 180) Phase Two: "PO contacts and drug testing are each reduced to once per week. Drug court appearances are required once every two to five weeks during Phase Two" (Brewster, 2001, p. 180) Phase Three: "PO contacts and drug testing are reduced to once every two weeks, and Drug Court appearances occur every four to six weeks" (Brewster, 2001, p. 180) Those that complete the programme successfully have their charges dismissed and removed from the record Care is provided by the Chester County Department of Drug and Alcohol Services	11.4% graduated, and an additional 3.3% were 'closed successful' Survival analysis suggested that "a greater proportion of the comparison subjects survived over time than did the drug court participants" (Brewster, 2001, p. 192). However, this may be due to more stringent termination criteria being applied to drug court participants For those attending the programme, there were no statistically significant differences in programme survival by gender, ethnicity, primary drug of choice, or frequency of drug use. However, differences between Caucasian and African American groups approached statistical significance, with Caucasians appearing to do better. It is unclear exactly why this was the case
Gottfredson and Exum., (2002) Baltimore City Drug Treatment Court (BCDTC), USA	Non-violent adult offenders supervised by the Baltimore City Division of Parole and Probation	Paper states that these are listed in an unpublished technical report	Those participating in the programme do so in lieu of a custodial sentence, but they may also spend time in jail whilst on the programme: "One surprising finding was that nearly 11 percent of the offenders randomly assigned to drug treatment court received incarceration-only sentences, given that the aims of the program are to keep offenders out of prison and provide intensive probation supervision" (Gottfredson & Exum, 2002, p. 348) "After jail-based acupuncture, the most common types of treatment received by people attending this specialist court were outpatient (23.7 percent) and intensive outpatient (19.4 percent)" (Gottfredson & Exum, 2002, p. 347)	"Records as of February 2001 indicated that 31 percent of the treatment participants and 5 percent of the control participants had graduated from the program" (p346)
Harrell et al. (2000) Washington D.C. Superior Court	All drug felony defendants - including those committing violent offenses and all levels of severity and duration of drug use	Unclear	Standard docket: twice-weekly drug tests and judicial monitoring Treatment docket: "a comprehensive treatment program designed to provide drug-involved individuals with the skills, self-esteem, and community resources necessary to help them leave the criminal life" (Harrell et al., 2000, p. 1) Sanctions docket: applied penalties to those that failed or failed to attend drug tests and encouraged people to access community-based treatment. People on the non-standard programmes had a higher chance of receiving probation rather than a custodial sentence if they successfully completed the programme	"19 percent of the 140 participants graduated from the treatment program, and 9 percent left the program doing well" (p6)
Mackin et al. (2008) Harford County District Court Adult Drug Court program	Participants "must have an alcohol- or drug-related or motivated criminal charge. Most current drug court participants are first-time offenders with no felony charge. However, prospective participants	Files are usually reviewed by the State's Attorney's Office to decide if they are eligible and sends a letter of invitation to the potential participant Referrals can also be made by a	The programme had four phases and took a minimum of 9.5 months to complete overall. This included drug testing, individual counselling and group therapy combined with a range	72% graduated overall Logistic regression showed that "the only characteristic significantly related to program success was the age of first substance use, indicating that

(*continued on next page*)

Table 3 (*continued*)

Study and Setting	Eligibility	Who Can Refer?	Summary of Programme Content	Overall Graduation Rate and Predictors of Success
	with felonies and second-time offenses are also eligible. Defendants with a history of violence, weapons charges, a charge of possession with indication of drug distribution, or serious driving record violations are generally excluded" (p2)	Public Defender, Judge and Parole and Probation Agent	of incentives for compliance and sanctions for non-compliance	participants were 1.16 times more likely ($p < 0.05$) to graduate, or have 16% greater chance of graduation for each year older the participant was a their age of first substance use" (Mackin et al., 2008, p. 17) A multivariate analysis identified that those staying in the programme for longer being more likely to graduate
Marchand et al. (2006) Kalamazoo County Adult Drug Treatment Court (KADTC) in Michigan, USA	The programme was aimed at "substance-abusing adults charged with non-violent criminal offenses as well as circuit court probationers and parolees whose involvement with Drug Court is a condition of probation/parole" (Marchand et al., 2006, p. 15)	Participants could be referred by a Prosecutor or Defence Attorney, or as a condition of probation, or "from the Department of Corrections if they commit a technical violation of probation/ parole" (Marchand et al., 2006, p. 15)	The programme consisted of a combination of drug testing and treatment which could include intensive outpatient therapy, individual and group therapy sessions, 12-step programme participation, relapse prevention groups, residential treatment and detoxification (Marchand et al., 2006, pp. 16–17)	27% graduated overall Older age of first use Alcohol as drug of choice A lower number of prior arrests. However, when this difference was examined by gender, it remained significant for men, but not for women (Marchand et al., 2006, p. 35)
Stageberg et al. (2001) Drug court in Polk County, USA	Target population was people on probation being recommended for revocation by the Department of Correctional Services who: - "Had a risk score of 12 or higher had a history of alcohol or drug abuse - Had substance abuse-related technical violations or a new arrest - Did not have a current offence consisting of a felony against persons - Had not had an arrest for a forcible felony within the past five years - Had not had an arrest for a felony against persons while under current supervision" (p17-18)	Member of the court team Private attorney Public defender Probation officer Judge, Other justice system staff (Stageberg et al., 2001, p. 22)	Treatment was given by a wide range of providers in the region, and would include urine testing with responses to test results being tailored to the individual Participants also had regular reviews at court, intensive probation supervision, and were required to do community service.	43.5% graduated within the two-year study period (49% of women and 38% of men) White participants were more likely to graduate than black participants, which may be due to differences in drug of choice and associated treatment effectiveness. Aged 21 to 25 or 36 to 40, Married or divorced at intake Having graduated from high school Weekly income of $300 or more at programme termination Having used drugs intravenously or by inhalation rather than smoking No history of incarceration

Abuse and Crime Prevention Act (SACPA) - a state-wide policy to divert offenders with substance misuse problems away from the criminal justice system and into treatment (Anglin et al., 2013; Chun et al., 2007; Evans et al., 2014; Longshore et al., 2005). The policy has similarities to drug courts as participants receive probation with drug treatment in lieu of incarceration or probation without treatment. This includes those "on probation or parole who commit nonviolent drug offenses or who violate drug-related conditions of community supervision to elect community-based treatment" (Anglin et al., 2013, p. 2). There are various types of treatment available under this programme including "drug education, regular and intensive outpatient drug-free treatment, short- and long-term residential treatment, and pharmacotherapy" (Longshore et al., 2005, p. 13) – often using methadone for those with heroin dependence. However, SACPA differs from most drug courts in that the programme is available to *all* offenders meeting conviction-based eligibility criteria – i.e. areas cannot also introduce other eligibility criteria such as addiction severity level (Evans et al., 2014). Additionally, there are no funds within this programme for urine testing, and participants cannot be imprisoned for non-compliance – instead, they have three opportunities to re-enter treatment after non-compliance.

Research findings suggest that SACPA has a positive impact on access to and engagement with treatment (Anglin et al., 2013; Longshore et al., 2005). The programme is also reported to have produced cost savings (Anglin et al., 2013). However, Longshore et al. (2003) note that there was variation in counties across California in which offence types were eligible for SACPA, and on the proportion of probationers entering SACPA on felony as opposed to misdemeanour convictions. This has implications for programme costs.

The literature provides some insight into the characteristics of successful implementation of this approach, and the resources needed - attendance rates for assessments could be increased by conducting the assessments in or near the court, and allowing people more days to report for assessment (Longshore et al., 2005, p. 53).

Variation in treatment completion is reported by: ethnicity – 37.5% of Whites, 38.8% of Asian/Pacific Islanders, 29.4% of African Americans, 32.2% of Hispanics, and 29.8% of Native Americans completed treatment; age – older clients were more likely to complete treatment; primary drug of choice – completion rates were 28.3% for heroin users, and 35.2% for methamphetamine users; years of drug use – those with more years of use had a higher completion rate; and probation versus parole – the completion rate for probation was 35%, compared to 28.6% for those on parole (Longshore et al., 2005).

In San Francisco County, probation and parole officers could refer Proposition 36 cases to a centralised treatment access program where they will be assessed within 30 days and directed to appropriate treatment based on the outcomes of the assessment. Chun et al. (2007) compared outcomes for 24 adults that were allocated to therapeutic community treatment for persons receiving opioid replacement therapy as a result of such assessments to those of 61 people that were on probation, but accessed treatment voluntarily. "More clients in the Proposition 36 group (79%) were receiving methadone treatment at baseline than those in the probation group (46%). Also, clients in the probation group were more likely to have been incarcerated in the 30 days preceding the baseline interview (36% vs. 13%, respectively) (Chun et al., 2007, p. 704). The severity of drug use decreased over the 12-month follow up period for both groups, but there was "no improvement in either group for measures of medical, psychiatric, and family/social problems, suggesting that additional targeted interventions in these areas

may be required to produce gains in these areas" (Chun et al., 2007, p. 706).

Finally, Evans et al. (2014) compared outcomes from Proposition 36 with outcomes from drug courts in California. "Both Prop 36 and the drug courts diverted drug offenders from jail and prison and into community-based treatment settings, and both programs reduced drug use" (Evans et al., 2014, p. 919). However, when criminal justice outcomes are considered, Prop 36 was less effective at reducing longer-term recidivism. The researchers conclude that further "research is needed to determine if better long-term outcomes result when drug offenders are better assessed and matched to the most appropriate drug diversion program" (Evans et al., 2014, p. 921) based on treatment and supervision needs and previous criminal justice system involvement and drug-use histories.

4.2.4. Other factors influencing treatment entry, retention, and outcomes

When considering any individual intervention, it is important to consider not only precisely what type of treatment or intervention is being offered and what that consists of, but also precisely *how* the treatment or intervention is delivered. How do factors like the setting, duration, or the professional background of the individual(s) delivering the intervention influence outcomes? Several studies included in the review considered these types of questions.

Findings from the first of these studies, a small-scale feasibility study, suggested that buprenorphine opioid substitution treatment in primary care, as opposed to a specialist facility, may be effective in terms of reducing illegal drug use, and potentially in terms of reducing HIV risk behaviours (Brown et al., 2013).

Kelly et al. (2013) conducted a secondary analysis of data from a randomised clinical trial comparing the following methods of treating opioid dependence: a) 'interim methadone' (four months receiving methadone followed by methadone counselling), b) 'standard methadone' (both methadone and counselling over 12 months), or c) 'restored methadone' (methadone and counselling for 12 months, with the latter being provided by a counsellor with a reduced caseload). Groups b and c were combined in the analysis. Here, there were no significant interactions between criminal justice status, treatment group, and self-reported number of days using heroin or cocaine, number of opioid or cocaine positive tests, days in treatment over 12 months, days of hospitalisation or criminal justice outcomes such as days or incarceration.

In two US states, Alemi et al. (2006) compared 'seamless combinations' of probation and substance misuse treatment (i.e. where these services are co-located and work together), with 'traditional probation', where clients choose whether or not to access treatment outside of the criminal justice system. In terms of health outcomes, those in the 'seamless' group had more days in treatment and more days in mental health hospitals than the 'traditional' group, but had fewer days in physical health hospitals. When considering both health and criminal justice outcomes combined, the researchers concluded that seamless probation is *not* more cost-effective than traditional probation.

Claus and Kindleberger. (2002) examined factors influencing treatment entry and drop out for an opportunity sample of 260 individuals with substance misuse problems that had been assessed at a central intake unit that then matched them with an appropriate treatment provider. The study focused on those receiving outpatient treatment, and those receiving residential treatment. Those receiving residential treatment were more likely to attend and to stay in treatment rather than dropping out. A shorter wait between the initial assessment and receipt of treatment increased the likelihood of treatment attendance. However, this relationship was not statistically significant when the researchers controlled for the level of care and addiction severity. Those that were on probation and those reporting a history of physical or sexual abuse were more likely to drop out of treatment (Claus & Kindleberger, 2002, p. 28).

4.2.5. Role of probation

Finally, it is important to consider the impact of community supervision itself on substance misuse. Hearnden. (2000) interviewed 278 offenders and 15 main grade Probation Officers in what was then Inner London Probation Service in the UK, and explored the role of probation and other interventions in reducing drug misuse. Self-report data on drug misuse and offending in the four weeks prior to arrest were compared with those for the four weeks prior to interview. This showed that there was a significant fall in drug use including injecting and associated expenditure whilst on probation, together with a reduction in crime. However, this was not straightforward, for example, half of the sample continued to use heroin. Offenders largely felt that the impact of probation had been positive in terms of assistance to reduce drug misuse, with 90% reporting that their officer had offered them assistance, and over half feeling that their officer had been a great deal of help. However, 20% said probation assistance had not made any difference – sometimes due to their own lack of motivation, or their officer's attitude. Sixty percent felt that the most important factors influencing levels of drug use were personal factors rather than related to probation. Some offenders felt that officers would benefit from more training, and some felt that services could be improved, for example through provision of rehabilitation units and counselling, particularly from ex-users.

This view was reflected in data from interviews with staff, with some feeling that they would benefit from more training, and some stating that most of their knowledge had been gained through working with other agencies. Provision could be improved through more consistent provision of on-site services, and more flexibility around enforcing National Standards with those with drug misuse problems.

5. Discussion

Clearly if we are to reduce substance misuse amongst people under community supervision, commissioning should be informed by a detailed understanding of needs, and of the most effective ways of addressing them in different populations and settings.

The research identified in this review provides some background information on the prevalence and complexity of substance misuse amongst people under community supervision, and factors that may increase an individual's likelihood of misusing drugs and/or alcohol. In addition, it evidences some of the benefits of effective interventions in preventing deaths and reducing harm associated with substance misuse. There is a high prevalence of substance misuse problems amongst people on probation when compared to the general population (Brooker, Sirdifield, Blizard, Denney, & Pluck, 2012; Brooker, Syson-Nibbs, Barrett, & Fox, 2009; Geelan, Griffin, Briscoe, & Haque, 2000; Mair & May 1997; Martyn, 2012; Newbury-Birch, Harrison, Brown, & Kaner, 2009; Pari, Plugge, Holland, Maxwell, & Webster, 2012). Indeed, many people on probation will misuse more than one type of drug, or misuse a combination of both drugs and alcohol (Martyn, 2012; Murphy & Sweet, 2004).

However, the range of data available is limited, and in some cases, quite dated. Commissioners and practitioners in the health and justice field would benefit from research-informed and up-to-date information about the prevalence of substance misuse, and the extent to which need is being met by service provision. Patterns of drug use are subject to change – as demonstrated by the recent rise in new psychoactive substances. Treatment therefore needs to be flexible and adaptive. Ideally, rather than being collected solely for research purposes, or for one-off needs assessments, resources would be invested by government into staffing and IT to enable such data to be collected and shared amongst agencies as routine practice. In this way, commissioners would be able to base decisions on an up-to-date needs profile.

Once the nature and complexity of needs is understood, we require evidence on the most effective ways of addressing them. How can we best provide services that reduce substance misuse, and associated offending behaviour? Exactly what do we wish services to achieve – should we be considering harm reduction as well as achieving abstinence when

measuring outcomes? Which types of intervention are effective? Which groups and settings are they best suited to? What resources do they require, and are there any particular aspects of how an intervention is delivered that will increase or decrease the likelihood of positive outcomes being achieved?

In relation to these questions, we identified a diverse range of literature on ways of addressing substance misuse problems for those in contact with probation or on parole. However, it is difficult to draw firm conclusions from much of this literature due to its heterogeneity in terms of the specific types of treatment and intervention being investigated, and the methodological approaches being employed. We did not use quality assessment to exclude studies from this review, and many of those included were small-scale and/or noted that further research is needed to establish the generalisability of their findings (see for example Brodie et al., 2009; Brown et al., 2013; Claus & Kindleberger, 2002; Cropsey et al., 2011; Hollway et al., 2007; J. F. Kelly et al., 2005; Martin et al., 2004; Martin et al., 2003). We grouped the studies into specific types of treatment or intervention, but even within these categories, there was a huge amount of variation. For example, whilst we identified a relatively large amount of literature relating to specialised courts, and this provided evidence to suggest that such courts may have positive impacts in terms of engaging people in treatment and reducing substance misuse, there was huge variation in terms of eligibility criteria, programme content, programme structure, staffing, and graduation rates achieved. Thus recommending any one model is problematic. Indeed a paper published after this review was completed questions the public health benefit of some models due to variation in whether or not particular evidence-based forms of treatment are offered (Csete, 2020). Outcomes in many studies were affected by participant and programme characteristics and the context within which programmes were delivered. Further research should build on this to offer further insight into how provision can be tailored to give maximum benefit to different groups.

It is clear from this review, that conducting research in the 'real world setting' of criminal justice, with populations that may be difficult to engage is far from easy. However, if commissioners are to make evidence-based decisions about how best to address substance misuse problems amongst those under community supervision, it is vital that they have an improved evidence base to draw upon. Alongside other areas of healthcare (Brooker, et al., 2020; Sirdifield, et al., 2020), it appears that currently, substance misuse in probation and parole populations is a field where very little meaningful research money is invested worldwide. Given the size of the problem, this is worth underlining.

Internationally, substance misuse is a highly important issue, for example in England and Wales, in their latest health strategy (NPS, 2019) the National Probation Service state:

> *'An MoJ study of individuals starting Community Orders in 2009/10 showed that of those who received a formal assessment, 32% were identified as having a drug misuse need and 38% an alcohol problem.'*

Many presentations of drug/alcohol problems are further compounded by the complexity of the presentation. In our own prevalence study of mental health problems in probation (Brooker, C., Sirdifield, C., Blizard, R., Denney, D. & Pluck, G, 2012) we found that just over 70% of those with a mental health disorder also had a substance misuse problem and, of course, high levels of the probation population also screen positive for a personality disorder (nearly 90% of all those with a mental health disorder).

Despite this, drug and alcohol services in England have suffered big budget reductions as part of the Government's austerity measures (2012–2019). It has been reported that services have received budget cuts between 30 and 50% over the last few years as previously ring-fenced monies in Local Authorities have been seriously reduced (Drummond, 2017).

At the same time as services have been reduced there has been an alarming increase in the mortality associated with drug and alcohol use. The Office of National Statistics (ONS) has recently confirmed the highest ever annual increase in drug related deaths in England and Wales since records began. There were 4359 deaths related to drug poisoning in England and Wales in 2018 in comparison with 3756 in 2017, an increase of 16% year on year (Office for National Statistics, 2019). The ONS report also highlighted the continuation of opiate-related deaths as the most frequently reported and a doubling of cocaine related deaths.

The National Probation Strategy for Health and Social Care (NPS, 2019) stated that the:

> *NPS will work with local partners to improve referral pathways for any individual who may benefit from substance misuse treatment and/or services* (National Probation Service, 2019: 13).

It is our belief that proper funding is needed to enable key gaps in the literature to be addressed to ensure not only that clear pathways are in place, but that the support that they lead to is research-informed and produces positive outcomes for those accessing it.

Funding

This article presents independent research funded by the National Institute for Health Research (NIHR) under its Research for Patient Benefit (RfPB) Programme (Grant Reference Number PB-PG-0815-20012). The views expressed are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care.

Declaration of competing interest

The authors have no competing interests to declare.

Acknowledgements

ANONYMISED for her support with developing the search strategy.

References

Alemi, F., Taxman, F., Baghi, H., Vang, J., Thanner, M., & Doyon, V. (2006). Costs and benefits of combining probation and substance abuse treatment. *The Journal of Mental Health Policy and Economics, 9*(2), 57–70.

Anglin, M. D., Nosyk, B., Jaffe, A., Urada, D., & Evans, E. (2013). Offender diversion into substance use disorder treatment: The economic impact of California's proposition 36. *American Journal of Public Health, 103*(6), 1096–1102. https://doi.org/10.2105/AJPH.2012.301168

Ashby, J., Horrocks, C., & Kelly, N. (2010). Delivering the Alcohol Treatment Requirement: Assessing the outcomes and impact of coercive treatment for alcohol misuse. *Probation Journal, 58*(1), 52–67. https://doi.org/10.1177/0264550510381325

Brewster, M. P. (2001). An evaluation of the Chester County (PA) drug court program. *Journal of Drug Issues, 31*(1), 177–206. https://doi.org/10.1177/002204260103100110

Brodie, J. D., Case, B. G., Figueroa, E., Dewey, S. L., Robinson, J. A., Wanderling, J. A., et al. (2009). Randomized, double-blind, placebo-controlled trial of vigabatrin for the treatment of cocaine depdendence in Mexican parolees. *American Journal of Psychiatry, 166*(11), 1269–1277. https://doi.org/10.1176/appi.ajp.2009.08121811

Brooker, C., & Ramsbotham, D. (2014). Probation and mental health: Who cares? *British Journal of General Practice, 64*(621), 170–171. https://doi.org/10.3399/bjgp14X677743

Brooker, C., Sirdifield, C., Blizard, R., Denney, D., & Pluck, G. (2012). Probation and mental illness. *Journal of Forensic Psychiatry and Psychology, 23*(4), 522–537. https://doi.org/10.1080/14789949.2012.704640

Brooker, C., Sirdifield, C., & Marples, R. (2020). Mental health and probation: A systematic review of the literature. *Forensic Science International: Mind and Law, 1*(100003), 1–9. https://doi.org/10.1016/j.fsiml.2019.100003

Brooker, C., Sirdifield, C., Ramsbotham, D., & Denney, D. (2017). NHS commissioning in probation in England - on a wing and a prayer. *Health and Social Care in the Community, 25*(1), 137–144. https://doi.org/10.1111/hsc.12283

Brooker, C., Syson-Nibbs, L., Barrett, P., & Fox, C. (2009). Community managed offenders' access to healthcare services: Report of a pilot study. *Probation Journal, 56*(1), 45–59. https://doi.org/10.1177/0264550509102401

Brown, R., Gassman, M., Hetzel, S., & Berger, L. (2013). Community-based treatment for opioid dependent offenders: A pilot study. *American Journal on Addictions, 22*, 500–502. https://doi.org/10.1111/j.1521-0391.2012.12049.x

Carter, J., Ryan, M., & Scott, S. (2000). Creating a DIN to tackle drug-related deaths in the community. *Journal of Clinical Forensic Medicine, 7*, 130–138. https://doi.org/10.1054/jcfm.2000.0428

Chun, J., Guydish, J. R., Sorensen, J. L., Haug, N. A., Andrews, S., & Nelson, L. (2007). Outcomes in a sample of opioid-dependent clients treated under California's Proposition 36. *Journal of Drug Issues, 37*(3), 699–715. https://doi.org/10.1177/002204260703700310

Claus, R. E., & Kindleberger, L. R. (2002). Engaging substance abusers after centralized assessment: Predictors of treatment entry and dropout. *Journal of Psychoactive Drugs, 34*(1), 25–31. https://doi.org/10.1080/02791072.2002.10399933

Collins, B. J., Cuddy, K., & Martin, A. P. (2016). Assessing the effectiveness and cost-effectiveness of drug intervention programmes: UK case study. *Journal of Addictive Diseases, 36*(1), 5–13. https://doi.org/10.1080/10550887.2016.1182299

Cropsey, K. L., Lane, P. S., Hale, G. J., Jackson, D. O., Clark, C. B., Ingersoll, K. S., … Sititzer, M. L. (2011). Results of a pilot randomized controlled trial of buprenorphine for opioid dependent women in the criminal justice system. *Drug and Alcohol Dependence, 119*(3), 172–178. https://doi.org/10.1016/j.drugalcdep.2011.06.021

Csete, J. (2020). United States drug courts and opioid agonist therapy: Missing the target of overdose reduction. *Forensic Science International: Mind and Law, 1*, 100024. https://doi.org/10.1016/j.fsiml.2020.100024

Department of Health. (2013). *Statutory guidance on Joint strategic needs assessments and Joint health and wellbeing strategies*. London: Department of Health.

Drummond, C. (2017). *Colin Drummond: Cuts to addiction services are a false economy. theBMJopinion*. https://blogs.bmj.com/bmj/2017/05/25/colin-drummond-cuts-to-addiction-services-in-england-are-a-false-economy/.

Eley, S., Gallop, k., McIvor, G., Morgan, K., & Yates, R. (2002). *Drug treatment and testing orders: Evaluation of the Scottish pilots*. Edinburgh: Scottish Executive Central Research Unit.

Evans, E., Li, L., Urada, D., & Anglin, M. D. (2014). Comparative effectiveness of California's Proposition 36 and drug court programs before and after propensity score matching. *Crime & Delinquency, 60*(6), 909–938. https://doi.org/10.1177/0011128710382342

Fox, C., Albertson, K., Williams, K., & Ellison, M. (2011). Estimating the costs and benefits of an alcohol treatment requirement. *Drugs and Alcohol Today, 11*(3), 147–155.

Geelan, S., Griffin, N., Briscoe, J., & Haque, M. S. (2000). A bail and probation hostel for mentally disordered defendants. *Journal of Forensic Psychiatry, 11*(1), 93–104. https://doi.org/10.1080/095851800362382

Gottfredson, D. C., & Exum, M. L. (2002). The baltimore city drug treatment court: One-year results from a randomized study. *Journal of Research in Crime and Delinquency, 39*(3), 337–356. https://doi.org/10.1177/002242780203900304

Gray, R. M. (2002). The Brooklyn Program - innovative approaches to substance abuse treatment. *Federal Probation, 66*(3), 9–16.

Gregoire, T. K., & Burke, A. C. (2004). The relationship of legal coercion to readiness to change among adults with alcohol and other drug problems. *Journal of Substance Abuse Treatment, 26*, 35–41. https://doi.org/10.1016/S0740-5472(03)00155-7

Gryczynski, J., Kinlock, T. W., kelly, S. M., O'Grady, K. E., Gordon, M. S., & Schwartz, R. P. (2012). Opioid agonist maintenance for probationers: Patient-level predictors of treatment retention, drug use, and crime. *Substance Abuse, 33*, 30–39. https://doi.org/10.1080/08897077.2011.616816

Gyngell, K. (2011). The UK's treatment war on drugs: A lesson in unintended consequences and perverse outcomes. *The Journal of Global Drug Policy and Practice, 5*(1).

Hall, M. T., Golder, S., Higgins, G. E., & Logan, T. K. (2016). Nonmedical prescription opioid use among victimized women on probation and parole. *Addictive Behaviors, 53*, 113–119. https://doi.org/10.1016/j.addbeh.2015.10.008

Harrell, A., Cavanagh, S., & Roman, J. (2000). *Evaluation of the D.C. Superior court drug intervention programs*. Washington D.C.: U.S. Department of Justice.

Hearnden, I. (2000). Problem drug use and probation in London: An evaluation. *Drugs: Education, Prevention and Policy, 7*(4), 367–380. https://doi.org/10.1080/dep.7.4.367.380

Hollway, T., Mawhinney, S., & Sheehy, N. (2007). Treating addiction, tackling crime: The impact of probation-led residential treatment on offender substance misuse, recidivism and attitudes towards the criminal justice system. *Irish Probation Journal, 4*(1), 108–124.

Jason, L. A., Olson, B. D., & Harvey, R. (2015). Evaluating alternative aftercare models for ex-offenders. *Journal of Drug Issues, 45*(1), 53–68.

Joseph, H., Stancliff, S., & Langrod, J. (2000). Methadone maintenance treatment (MMT): A review of historical and clinical issues. *Mount Sinai Journal of Medicine, 67*(5&6), 347–363.

Kelly, J. F., Finney, J. W., & Moos, R. (2005). Substance use disorder patients who are mandated to treatment: Characteristics, treatment process, and 1- and 5-year outcomes. *Journal of Substance Abuse Treatment, 28*(3), 213–223. https://doi.org/10.1016/j.jsat.2004.10.014

Kelly, S. M., O'Grady, K. E., Mitchell, S. G., Brown, B. S., & Schwartz, R. P. (2011). Predictors of methadone treatment retention from a multi-site study: A survival analysis. *Drug and Alcohol Dependence, 117*, 170–175.

Kelly, S. M., O'Grady, K. E., Jaffe, J. H., Gandhi, D., & Schwartz, R. P. (2013). Improvements in outcomes in methadone patients on probation/parole regardless of counseling early in treatment. *Journal of Addiction Medicine, 7*(2), 133–138. https://doi.org/10.1097/ADM.0b013e318284a0c1

Kleinpeter, C., Deschenes, E. P., Blanks, J., Lepage, C. R., & Knox, M. (2006). Providing recovery services for offenders with co-occurring disorders. *Journal of Dual Diagnosis, 3*(1), 59–85. https://doi.org/10.1300/J374v03n01_06

Longshore, D., Urada, D., Evans, E., Hser, Y.-I., Prendergast, M., & Hawken, A. (2005). *Evaluation of the substance abuse and crime prevention Act*. Los Angeles: University of California Los Angeles.

Loue, S. (2003). The criminalization of the addictions. Toward a unified approach. *The Journal of Legal Medicine, 24*, 281–330. https://doi.org/10.1080/01947640390231948

Mackin, J., Carey, S. M., Finigan, M. W., Lucas, L. M., Strong, S. E., & Waller, M. S. (2008). *Harford County district court adult drug court outcome and cost evaluation*.

Mair, G., & May, C. (1997). *Offenders on probation, Home Office research study 167*. London: Home Office.

Marchand, G., Waller, M., & Carey, S. M. (2006). *Kalamazoo county adult drug treatment court outcome and cost evaluation. Final report*. Portland: NPC Research.

Martin, B. K., Clapp, L., Alfers, J., & Beresford, T. P. (2004). Adherence to court-ordered disulfiram at fifteen months: A naturalistic study. *Journal of Substance Abuse Treatment, 26*, 233–236. https://doi.org/10.1016/S0740-5472(03)00208-3

Martin, B. K., Clapp, L., Bialkowski, D., Bridgeford, D., Amponsah, A., Lyons, L., et al. (2003). Compliance to supervised disulfiram therapy: A comparison of voluntary and court-ordered patients. *American Journal on Addictions, 12*, 137–143. https://doi.org/10.1111/j.1521-0391.2003.tb00611.x

Martyn, M. (2012). Drug and alcohol misuse among adult offenders on probation supervision: Findings from the drugs and alcohol survey 2011. *Irish Probation Journal, 9*, 75–93.

McSweeney, T., Stevens, A., Hunt, N., & Turnbull, P. J. (2007). Twisting arms or a helping hand? Assessing the impact of 'coerced' and comparable 'voluntary' drug treatment options. *British Journal of Criminology, 47*, 470–490. https://doi.org/10.1093/bjc/azl087

Murphy, D., & Sweet, A. (2004). Substance misuse and offending: An innovative partnership providing assessment and treatment. *Irish Probation Journal, 1*(1), 14–16.

National Probation Service. (2019). *National probation service health and social care strategy 2019-2022*. London: HM Prison and Probation Service.

Newbury Birch, D., Harrison, B., Brown, N., & Kaner, E. (2009). Sloshed and sentenced: A prevalence study of alcohol use disorders among offenders in the north east of England. *International Journal of Prisoner Health, 5*(4), 201–211. https://doi.org/10.1080/17449200903343183

NHS Commissioning Board. (2012). *Commissioning fact sheet for clinical commissioning groups*. London https://www.england.nhs.uk/wp-content/uploads/2012/07/fs-ccg-respon.pdf.

NHS Commissioning Board. (2013). *Securing excellence in commissioning in offender health*. London http://www.england.nhs.uk/wp-content/uploads/2013/03/offender-commissioning.pdf.

Nicosia, N., Kilmer, B., & Heaton, P. (2016). Can a criminal justice alcohol abstention programme with swift, certain, and modest sanctions (24/7 sobriety) reduce population mortality? A retrospective observational study. *Lancet Psychiatry, 3*, 226–232. https://doi.org/10.1016/S2215-0366(15)00416-2

Office for National Statistics. (2019). *Deaths related to drug poisoning in England and Wales: 2018 registrations*. London: Office for National Statistics.

Osborne, A. (2013). Future delivery of the drug interventions programme: Do the benefits justify the costs? *Journal of Forensic and Legal Medicine, 20*, 816–820. https://doi.org/10.1016/j.jflm.2013.06.022

Pari, A. A. A., Plugge, E., Holland, S., Maxwell, J., & Webster, P. (2012). Health and wellbeing of offenders on probation in England: An exploratory study. *The Lancet, 380*(S21). https://doi.org/10.1016/S0140-6736(13)60377-3

Powell, C., Bankart, J., Christie, M., Bamber, D., & Arrindell, T. (2009). Drug testing in the criminal justice system: Solutions to a costly commodity. *Journal of Substance Use, 14*(6), 393–407. https://doi.org/10.3109/14659890902963868

Revolving Doors Agency. (2017). *Rebalancing Act. A resource for Directors of Public Health, Police and Crime Commissioners, the police service and other health and justice commissioners, service providers and users*. London: Revolving Doors Agency.

Sia, T. L., Dansereau, D. F., & Czuchry, M. L. (2000). Treatment readiness training and probationers' evaluation of substance abuse treatment in a criminal justice setting. *Journal of Substance Abuse Treatment, 19*, 459–467. https://doi.org/10.1016/s0740-5472(00)00139-2

Sirdifield, C., Brooker, C., & Marples, R. (2020). Suicide and probation: A systematic review of the literature. *Forensic Science International: Mind and Law, 1*. https://doi.org/10.1016/j.fsiml.2020.100012, 100012.

Sirdifield, C., Marples, R., Brooker, C., Denney, D., Siriwardena, A. N., Maxwell-Harrison, D., et al. (2019). *Probation healthcare commissioning toolkit: A resource for commissioners and practitioners in health and criminal justice*. Lincoln: University of Lincoln. https://probhct.blogs.lincoln.ac.uk/. (Accessed 8 September 2020).

Small, D. (2007). Fools rush in where angels fear to tread. Playing God with Vancouver's supervised injection facility in the political borderland. *International Journal of Drug Policy, 18*, 18–26. https://doi.org/10.1016/j.drugpo.2006.12.013

Stageberg, P., Wilson, B., & Moore, R. G. (2001). *Final report on the Polk County adult drug court*. Iowa: Iowa Department of Human Rights Division of Criminal and Juvenile Justice Planning Statistical Analysis Center.

Turnbull, P. J., & Webster, R. (2007). *Supervising crack-using offenders on drug treatment and testing orders*. London: National Treatment Agency for Substance Misuse.

Walters, S. T., Ondersma, S. J., Ingersoll, K. S., Rodriguez, M., Lerch, J., Rossheim, M. E., & Taxman, F. S. (2014). MAPIT: Development of a web-based intervention targeting substance abuse treatment in the criminal justice system. *Journal of Substance Abuse Treatment, 46*, 60–65.

Winter, R. J., Young, J. T., Stoové, M., Agius, P. A., Hellard, M. E., & Kinner, S. A. (2016). Resumption of injecting drug use following release from prison in Australia. *Drug and Alcohol Dependence, 168*, 104–111. https://doi.org/10.1016/j.drugalcdep.2016.08.640